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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/779,419	02/13/2004	Robert H. Wollenberg	T-6318A (538-69)	9057

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EXAMINER

NGUYEN, HOANG T

ART UNIT	PAPER NUMBER
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2856

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/779,419	Applicant(s) WOLLENBERG, ROBERT H.	
	Examiner HOANG NGUYEN	Art Unit 2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31Jan2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 64-84 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 64-84 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/18/04; 2/16/06; 10/22/07; 12/13/07</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. The request for a continued prosecution application (CPA) under 37 CFR 1.53(d) filed on [1] is acknowledged. 37 CFR 1.53(d)(1) was amended to provide that the CPA must be for a design patent and the prior application of the CPA must be a design application that is complete as defined by 37 CFR 1.51(b). See *Elimination of Continued Prosecution Application Practice as to Utility and Plant Patent Applications*, final rule, 68 *Fed. Reg.* 32376 (May 30, 2003), 1271 *Off. Gaz. Pat. Office* 143 (June 24, 2003). Since a CPA of this application is not permitted under 37 CFR 1.53(d)(1), the improper request for a CPA is being treated as a request for continued examination of this application under 37 CFR 1.114.

Claim Objections

2. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not). Therefore claims 72-85 has been renumbered 71-84 to comply with 37 CFR 1.126

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 64-66, 71, 79, 83 and 84 are rejected under 35 U.S.C 103(a) as being unpatentable over Heneghan *et al.*, JOURNAL OF ENGINEERING FOR GAS TURBINES AND POWER - TRANSACTIONS OF THE ASME, (JUL 1993) Vol. 115, No. 3, pp. 480-485), in view of Bartz *et al.*, (U.S. Patent No. 5,814,110) and Chadwick, (U.S. Patent Application Publication No. 2004/0230397).

5. Claim 64 is directed to a high throughput method for screening fuel additive composition samples, under program control, comprising:

(a) conducting molecular modeling of at least one fuel additive to formulate a leading candidate fuel additive composition sample for testing;

(b) containing a plurality of the leading candidate fuel additive composition samples in a plurality of test receptacles, each sample comprising at least one fuel additive, wherein the plurality of leading candidate fuel additive composition samples is at least 20;

(c) measuring the deposit formation of each sample to provide deposit formation data results for each sample; and,

(d) out putting the results of step (c), wherein the results of step (c) for each sample are transmitted to a computer, wherein the computer compares the results with a predetermined value delimiting a failure or passing of the results, and the computer

identifies failed samples to preclude further testing of the failed samples.

Heneghan teaches a method for measuring the performance of fuel additives in a plurality of fuel samples by measuring the amount of surface carbon deposit (see item 4 on page 481; item 7 on page 482; and Figure and description thereof).

Heneghan summarizes that the results from the deposit formation of the sample can be "used" for further calculation and *modeling*:

"These observations suggested a complicated relationship between the formation of carbon deposits and the temperature-driven consumption of oxygen. A simple analysis, based on a bimolecular reaction rate, correctly accounted for the shape of the oxygen consumption curve for various fuels. This analysis yielded estimates of global bulk parameters of oxygen consumption. ***The test rig yielded quantitative results, which will be very useful in*** evaluating fuels additives, understanding the chemistry of deposit formation, and eventually ***developing a global chemistry model.***" (Abstract).

Heneghan finally concludes:

"In the future, it will be interesting to study the oxygen and methane behavior for fuel additives to determine whether the observed trends for oxygen, methane, and deposits continue. So far, these trends clearly suggest that the consumption of oxygen at lower temperature and the more rapid production of methane indicate fewer deposits on the test section walls." (page 485, col. 1, second paragraph).

Heneghan teaches the use of his molecular modeling for further refinement of the fuel additives, he does not explicitly state that it be the first step in the high throughput screening process. Bartz teaches certain fuel compositions having optimized additives, wherein the additives are identified by computer modeling (see col. 3, lines 50-67 and col. 4, lines 1-5; see also Figure 11, and description thereof). The use of the information from the calculations is used to develop lead compounds (cols. 6-8).

One of ordinary skill in the art would have had a reasonable expectation of success in arriving at the invention as claimed because each of Heneghan and Bartz are directed to the screening of fuel additives for identifying compounds that provide a

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superior additive for the intended fuel. One of ordinary skill in the art would have recognized the benefit of first using a computer to screen a set of putative compounds for use as a fuel additive as taught by Bartz with the method of Heneghan because of the advantages that such modeling approaches provide regarding speed and saving in experimental efforts.

Although Heneghan neither retest fuels that have not passed the failing threshold, nor explicitly states a threshold values that eliminates certain subsequent testing of fuel additives, Chadwick teaches high throughput screening process with decision making systems and methods for advancing the most effective research and development efforts. One of the aspects of high throughput screening that Chadwick teaches is using a threshold value or cutoff to determine which tests or compound no longer have further interest or usefulness as a results of the compounds not meeting certain criteria (paragraph 0096). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the combination of Heneghan and Bartz by implementing additional process steps taught by Chadwick to achieve an optimum process for screening of compounds.

In addition, Heneghan testing is limited to three baseline fuels and three fuels blended with additives, and does not teaches the plurality of leading candidate fuel additive composition sample of at least 20, nor at least 50, nor at least 100 as in claims 83 and 84, Chadwick teaches an arbitrary lead optimization process (Figure 2 and paragraph 0038). Further more, these specific leading samples varies as it may depend on factors such as scope of the project, cost effectiveness, market condition to name a few. Thus, it would have been within the preview of one of ordinary skill in the art as a matter of design choice to select an optimum leading samples size as the user see fit for the project.

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6. Regarding claims 65-66, Heneghan teaches that at least one fuel additive is selected

from the group consisting of detergents, and that the additive is a detergent, as he stated:

"Currently, testing continues to elevate additives of four major varieties; anti-oxidants, dispersants, detergents, and metal detection." (page 483, col. 2, first paragraph).

Regarding in claim 71, Heneghan teaches that heating is carried out in the presence of

air (page 481, first partial paragraph; *i.e.*, nitrogen/oxygen mixture). As in claim 79, Heneghan suggest performing further calculations (see Abstract).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 67-69, 72-74 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heneghan in view of Bartz and Chadwick, as applied to claim 64-66 ,71, 79, 83 and 84 above, and further in view of Cherpeck, U.S. Patent no. 5,399,178.

9. Although Heneghan and Bartz teach all the limitations of the claims, neither explicitly teaches the full scope of what is claimed as itemized below by the teaching of Cherpeck.

Cherpeck teaches a series of chemical compound analogs that serve as fuel additives. Cherpeck teaches testing of multiple fuels samples by measuring their deposit formation (see Example 3). As in claims 67, the additives of Cherpeck are detergents, such as Mannich reaction products. As in claim 68, Cherpeck teaches heating the sample to a predetermined temperature for a predetermined period of time, and measuring the weight loss to determine deposit formation mass. As in claim 69, Cherpeck teaches that the temperature is about 100 °C (i.e., 200 °F). As in claims 72 and 73, Cherpeck measures the deposits after two temperatures, wherein the second temperature is higher than the first (see Example 1). As in claim 74, Cherpeck teaches the inert solvent octane.

One of ordinary skill in the art would have had a reasonable expectation of success in arriving at the invention as claimed because each of Heneghan, Bartz and Cherpeck are each directed toward the development of improved fuels compositions comprising additives. One of ordinary skill in the art would have found the detergents and approach to measuring deposit formation as taught by Cherpeck to be advantages in providing improved fuels, as well as recognized routine testing procedures of the fuels (*i.e.*, mass of deposits and performed at conventional temperatures). Therefore, to further modify the combine teachings of Heneghan and Bartz in view of the teachings of Cherpeck would have been obvious to one of ordinary skill in the art at the time of the invention.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 75-76, and 78-80 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Heneghan in view of Bartz and Chadwick as applied to claims as 64-66, 71, 79, 83 and 84 above, and further in view of Burrow et al. U.S. Patent Application Publication No. 2002/0090320 A1.

12. The limitations of claims 75, 76 and 78-80 are not expressly taught by Heneghan, Bartz and Chadwick. Burrow is directed to a system and method for high throughput processing using sample holders. As in claims 75 and 76, the system has a plurality of work perimeters, with a rotational robot preferably associated with each work perimeter, wherein the system and method are flexible, efficient, and robust high throughput processing, such as screening of chemical and/or biochemical libraries (see *Summary of the Invention*). Burrow teaches the linking of the system components with the robot for full automation, and control by a computer (paragraphs 0073 and 0074). As in claim 78 and 79, Burrow teaches recording the data on a data carrier (paragraph 0093), especially in view of Heneghan's method for further use of the data; and as in claim 80, the data carrier is in a remote location from the robot assembly (paragraph 0136).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the combination of Heneghan, Bartz and Chadwick to include a robotic assembly as taught by Burrow to achieve full automation of the process.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 70, 81 and 82 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heneghan in view of Bartz and Chadwick as applied to claims as 64-66 ,71, 79, 83 and 84 above, and further in view of Cherpeck, U.S. Patent No. 5,306,315.

15. Regarding claim 70, the combination of Heneghan, Bartz, and Chadwick fails to teach the limitation of the weight loss of the sample is determined by the thermal gravimetric analysis, TGA. However, Cherpeck teaches measuring fuel deposits by TGA in the presence of air, and teaches raising the temperatures and measuring the deposits at different temperatures (see Example 14),

And although Heneghan, Bartz, and Chadwick do not explicitly recite "about 50 ml" and "about 20 ml," as in claim 81 and 81, Cherpeck teaches a mass of the fuel additive samples of approximately 25 mg, thereby reading on the limitations of "about 50 ml" and "about 20 ml".

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to implement the TGA process with the desire additives sample volume as taught by Cherpeck to achieve thermal stability of the sample.

Double Patenting

16. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 64-84 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over the claims of copending Application No.12/799,817. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims in the instant application are more limiting and encompass the limitations set forth in application serial no.12/799,817

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

No claim is allowable.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HOANG NGUYEN whose telephone number is (571)270-1546. The examiner can normally be reached on M - F, 8:30AM - 6:00PM (except first Friday of bi-week).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571)-272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/HEZRON E WILLIAMS/
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